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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/576,623	05/23/00	CARMAN J	T4088.CONT

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HM12/0827

EXAMINER	
MOONAN,F	
ART UNIT	**PAPER NUMBER**
1638	9

DATE MAILED: 08/27/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

PTO-90C (Rev. 2/95)

1- File Copy

*U.S. GPO: 2000-473-000/44602

Office Action Summary	Application No.	Applicant(s)	
	09/576,623	CARMAN, JOHN G.	
	Examiner	Art Unit	
	Francis P Moonan	1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *30 May 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claims *1-33* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15)☐ Notice of References Cited (PTO-892)
16)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
18)☐ Interview Summary (PTO-413) Paper No(s). _____ .
19)☐ Notice of Informal Patent Application (PTO-152)
20)☒ Other: *See Continuation Sheet* .

Continuation of 20. Other: Paper No. 8. Petition to Make Special Decision.

DETAILED ACTION

Application 09/576,623 is a Continuation of prior application 09/018,875 filed February 5, 1998 (Now Abandoned) which claimed the benefit of Application No. 60/037,211, filed 5 February 1997.

Amendments of Paper No. 4 filed 15 February 2001 and Paper No. 5 filed 16 May 2001 have been entered. In Paper No. 4 filed 15 February 2001, applicant amended 1, 3,17, 18, 19, 21, 22, and 23-27. In Paper No. Filed 16 May 2001 applicant added new claims 28-32.

Claims 1, 3,17, 18, 19, 21, 22, and 23-27 are newly amended.

Claims 28-33 are new.

Claims 1-33 are pending in the office action that follows.

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

Group I. Claims 1-9, 11, 12, 16,1 7, 18, and 23, drawn to a method of breeding for diploid hybrid plant lines exhibiting apomixis by sexual crossing from a set of diploid parental lines exhibiting differences in the time to flower induction and duration of floral development in response to various photoperiods, classified in class 800, subclass 271, for example.

Group II. Claims 10,15, 18, and 23, drawn to a method of breeding for aneuploid plants exhibiting apomixis by sexual crossing from a set of parental lines exhibiting differences in the time to flower induction and duration of floral development in response to various photoperiods, classified in class 800, subclass 270, for example.

Group III. Claims 13, 14, 18, 23, and 25, drawn to a method of breeding for polyploid plants exhibiting apomixis by sexual crossing from a set of parental lines exhibiting differences in the time to flower induction and duration of floral development in response to various photoperiods, classified in class 800, subclass 271, for example.

Group IV. Claims 19, 20 and 26, drawn to a method of breeding for amphiploid plants exhibiting apomixis by sexual crossing from a set of parental lines exhibiting differences in ploidy , classified in class 298, subclass 269, for example.

Group V. Claims 18 , 21, 22, 24 , 27 drawn to a method of making a plant exhibiting apomixis with somatic cell hybridization, classified in class 800, subclass 277, for example.

Group VI. Claim 18 drawn to a method of making a plant exhibiting apomixis with colchicine treatment, classified in class 800, subclass 276, for example.

Group VII. Claims 28 , 29, and 30, drawn to an apomictic diploid hybrid plant and apomictic progeny of that plant exhibiting apomixis, classified in class 800, subclass 298, for example.

Group VIII. Claim 30, 32, and 33 drawn to an apomictic aneuploid plant and apomictic progeny of that plant , classified in class 800, subclass 298, for example.

Group IX. Claims 30-33, drawn to an apomictic amphiploid plant and apomictic progeny of that plant, classified in class 800, subclass 304, for example.

Group X. Claims 30, 32 and 33, drawn to an apomictic polyploid plant and apomictic progeny of that plant, classified in class 800, subclass 304, for example.

Claims 18, 23, and 30-33 will be examined to the extent that they read on the elected invention.

Although the inventions of Groups VII-X are apomictic plants and their apomictic progeny, and the inventions of Groups I-VI are methods to make apomictic plants, the inventions of Groups I-X are each distinct inventions.

The inventions of Groups VII-X may be classified in different classes and subclasses, are chemically and structurally distinct , the materials required to make and use one are not required for the others, and each may each be made by different methods.

The inventions of Groups VII-X are distinct, each from the other because:

Inventions VII-X are each unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, the plants of Groups VII-X each utilize entirely different genetic mechanisms as modes of operation to produce different apomictic phenotypes, and the genetic alterations which form the basis for the apomictic phenotypes of the plants of Groups VII-X are neither recited in the claims nor disclosed in the specification as being used together, although they are recited in the claims as alternate means to effect an apomictic phenotype. The genetic mechanisms conferring apomixis include those that influence certain aspects contributing to an apomictic phenotype, as well as the composition of the multiple alleles which may confer the apomictic phenotype. In the instant case, the inventions of Groups VII-X are drawn to plants each with a composition of alleles contributing to apomixis, by the genetic composition of the plants

as diploid drawn to Group VII; aneuploid drawn to Group VIII; amphiploid drawn to Group IX; and polyploid drawn to Group X.

Furthermore, the invention of Group VIII is an aneuploid plant, and its cytological structure is missing one of two possible homeologous chromatids from a chromosome pair, along with lacking genes corresponding to the missing chromatid, as compared to the inventions of Groups VII, IX, and X. Group VIII is thus structurally and chemically distinct from Groups VII, IX, and X.

Furthermore, the invention of Group X is a polyploid plant chemically and structurally distinct from the invention of Group VII, for example having multiples of chromatid pairs as compared to Group VII, which provide new morphological characteristics, for example larger flowers. Group VII is thus chemically and structurally distinct from Group X.

Group IX is an amphiploid plant, for example consisting of genomes from two very different species each with different numbers of chromosome pairs, and the requirement for plant starting material with differing genome complements of chromosomes is not required of the inventions of Groups VII or X. Group IX is thus chemically distinct with requirements for starting materials that are not necessary for the making and using the inventions of Groups VIII and X.

Thus, the inventions of Groups VII-X are chemically and structurally distinct inventions, the materials required to make and use one are not required for the others, and each may each be made by different methods, and the inventions of Groups VII-X are therefore unrelated.

The methods of Groups I-VI are all methods of making that are all distinct inventions from each other classified in different subclasses, with the essential required steps of one method not required for the others, such that the methods each produce chemically and structurally distinct products.

The method of Group VI is a method using a specific chemical called colchicine to produce autopolyploidy, and thus is not required of the methods to produce diploid, aneuploid, and amphiploid plants of Groups I, II, or IV, nor is it required to produce a somatic cell hybrids plant of Group V.

The methods of Groups VI and III utilize different starting materials that are chemically and structurally distinct, and the production of the polyploid plant via the colchicine treatment step is required for Group VI but not Group III. For example, the Invention of Group VI requires a polyploid induction step from diploid plant starting materials that are not required of the invention of Group III, which utilize starting plant materials from natural collections that are already polyploid via natural processes.

The method of Group II contains different steps not required of the inventions of Groups I, III, and IV. The invention of Group II is a method to produce an aneuploid plant, that has essential steps of cytological observations and identification of deficient chromosome pairs deficient of a chromatid as compared to the parentals, said steps including chromosome counting and matching, for example which are not required of Groups I, III, and IV.

The method of Group V contains different steps not required of the inventions of Groups I, II, and VI. The method of Group V is a method using somatic cell hybridization to produce new genome introgressions and combinations via cell fusions, without performing sexual crosses, while the inventions of Groups I, II, III, and IV require sexual crossing be performed to create new genomic combinations.

The methods of Groups III and IV require different steps from the method of Group I, and produce chemically and structurally distinct products. Group I is a method to produce a diploid plant , and Groups III and IV are methods to produce polyploid and amphiploid plants. The method of Group I does not require the starting material of polyploid plants of Group III, nor the two different plant starting materials with different numbers of pairs of chromosomes, as are required for the method of Group IV.

Inventions I-VI and inventions VII-X are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, genetic instability leading to altered expression of apomixis due to alteration in a diploid genome, or by chromosomal aberrations leading to aneuploid , polyploid, and amphiploid apomictic plants may be arrived at via chemical or high energy mutagenesis of plants, which are not required by any of the methods of Groups I-VI.

The inventions of Groups I and III are classified in a different subclass from the inventions of Groups VII and VIII, and the inventions of Groups II, IV, V, VI, IX and X are

each classified in different subclasses that are different from the inventions of Groups I and III or Groups VII and VIII. Therefore, because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter and classification, and searches of the different inventions place an undue burden on the examiner, restriction for examination purposes as indicated is proper.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Francis Moonan, whose telephone number is (703) 605-1201. The examiner can normally be reached on Monday through Friday 9:00 AM to 5:00 PM (E.S.T.) .

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula Hutzell, can be reached at (703) 308-4310. The fax phone number

for this Group is (703) 308-4315. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Francis Moonan, Ph. D.

24 August 2001

DAVID T. FOX
PRIMARY EXAMINER
GROUP ~~180~~ 1638